

8.7 Inverse Relations and Functions – 8 Exercises (1–10)

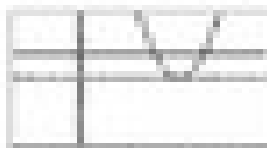
Sketch each function using a graphing calculator, and apply the Horizontal Line Test to determine whether or not an inverse function exists. Write yes or no.

1. The graph of the $y = \sin^{-1} x$ function shows that it is possible to find a horizontal line that intersects the graph of this function once. Therefore, you can conclude that an inverse function does not exist.



Graph of $y = \sin^{-1} x$.

2. The graph of the $y = \tan^{-1} x$ function shows that it is possible to find a horizontal line that intersects the graph of this function once. Therefore, you can conclude that an inverse function does not exist.



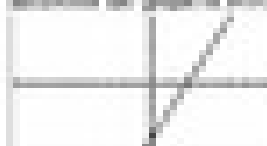
Graph of $y = \tan^{-1} x$.

3. The graph of the $y = \cos^{-1} x$ function shows that it is possible to find a horizontal line that intersects the graph of this function once. Therefore, you can conclude that an inverse function does not exist.



Graph of $y = \cos^{-1} x$.

4. Because there are more than one horizontal lines that intersect the graph of $y = x^2$, you can conclude that an inverse function does not exist.



Graph of $y = x^2$.